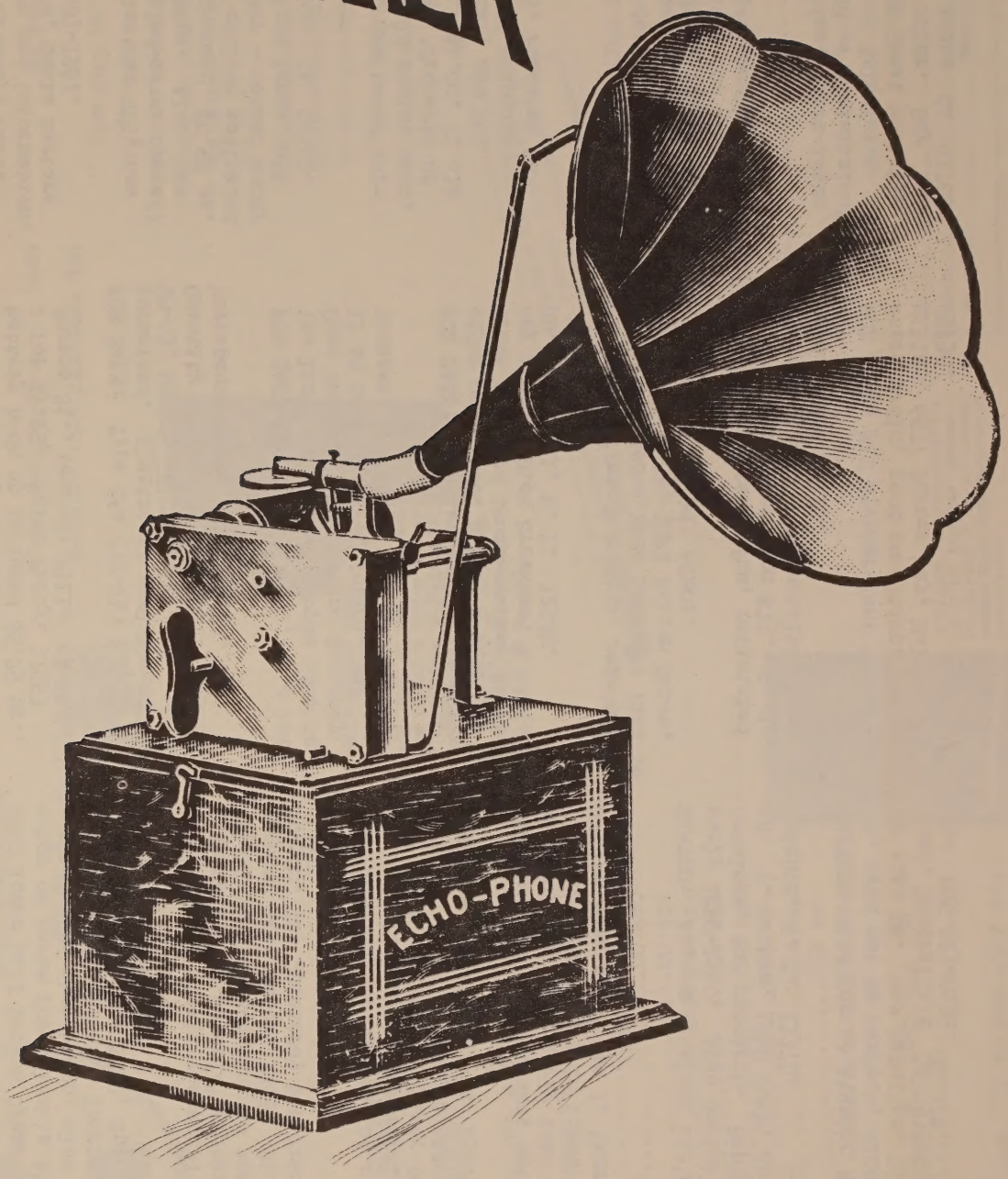
September, 1974

THE HORN SPEAKER



ECHO-PHONE NO. 10.

Mr. James A. VanDenAvyle
4 Barnes Street
Waltham, Mass. 02154

7

VOL. III NO. 7 September, 1974 Monthly except during July and August Price $3.00 yearly Single Issue 50¢ Publisher, Jim Cranshaw

Second-class postage paid at Dallas, Texas Office Address: 9820 Silver Meadow Drive, Dallas, Texas 75217 214-286-1673

THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

THE HORN SPEAKER

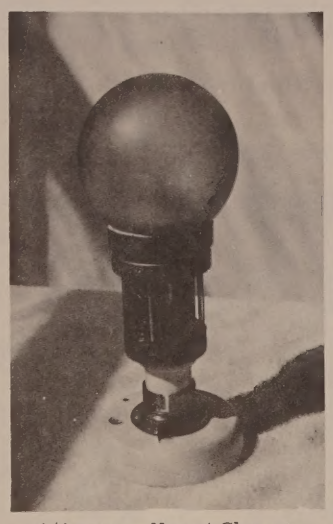
GLOW LAMP

NERNST GLOWER

By Floyd Lyons

In 1897 Dr. Walter Nernst of Gottingen, Germany, invented a new type of lamp. He had been intrigued with the Rare Earths used by Welsbach in his famous gas mantles which permitted them to be burned in open atmosphere and still not be consumed. Nernst came up with an innovation of his own—a non-combustible electric glower that did not have to be enclosed in a vacuum. Lane-Fox and Edison had suggested just such an illuminant but Dr. Nernst was the first to pursue this subject to its commercially successful conclusion.

The accompanying schematic shows the four main elements of this lamp: heater, glower, ballast and electro-magnet. The heater coil is made of fine platinum wire wound on a thin porcelain tube and imbedded in cement to protect it from the intense heat of the glower when the latter becomes white hot. The principal ingredient of the glower was zirconia, which is a non-conductor when cold, and progressively decreases in resistance as it becomes hotter. The ballast consists of an iron wire coil sealed in a bulb filled with hydrogen gas. Iron has the property of increasing in resistance when current increases, thereby off-setting the decreasing of resistance of the glower when it becomes hot. This setup can maintain a constant current through a 40 volt fluctuation. The electro-magnet is of the common garden variety.



1/4 ampere Nernst Glower

Starting at the input, current first flows through the heater circuit. Remember, the glower is a non-conductor until hot. The heater is placed near the glower—when the temperature is raised to approximately 700 C. (1300 F.), current begins to also flow through the glower. As the current builds up in the glower circuit, the magnet is actuated, attracting the armature and breaking the heater circuit. To prevent the glower from becoming overheated in its own circuit, a compensating or steadying ballast must be replaced in series with it. This is the iron wire ballast described above.

1/2 ampere Nernst Glower

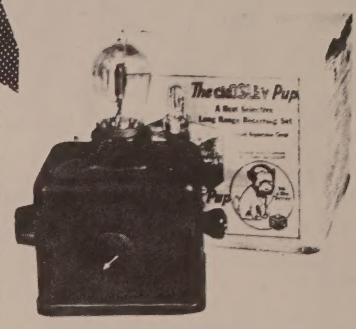
When the power is turned off, the armature, working by gravity, drops and closes the heater circuit, thereby completing the cycle. The lamp is then in readiness for relighting.

The schematic and lamp described above is known as the automatic type. The non-automatic came without a heater and had to be set in motion by a match, or some external source of heat.

The number of glowers incorporated in one lamp varied from one to six, although a 30-glower lamp was also made. In the multiple type, there was one ballast for each glower, but a doubling up on heaters was common. Six glowers may have only four heaters, for instance.

Continued on page 2

FIND OF THE MONTH



By Alan W. Diaz

While browsing through a junk shop during my lunch hour I came across a bushel basket of old tin boxes and dirty bottles. Sticking up through the junk I spotted what appeared to be an old fuse box. No, on second inspection, it looked more like a tube socket.

Not yet excited, I lifted the little box from among the junk. On the bottom was that old tell-tale label that stated "for amateur and experimental use only".

Being new at this game, the name Powel Crosley Jr., had no particular meaning to me until I got home and looked it up. What I had was a 1923 Crosley "Pup".

Back at the junk shop, I was inquiring as to the price of the relic. The elderly man looked it over and not recognizing any significant difference between it and the rest of the junk, replied 50¢.

I paid the 50¢ and he took me outside to where the garbage cans were. He opened the lid and peered inside. Then he looked at me and said "I guess the trash man already picked it up, I had seven more of those things this morning but I threw them out."

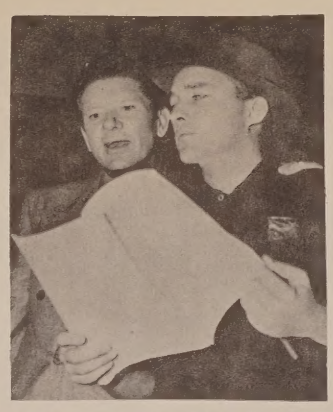
I've been back to that place several times hoping the old man was mistaken about his loss, but apparently the other seven Crosley Pups have taken their place in nature like the fate of many radios. I'm thankful that I was able to recover the one set.

Alan W. Diaz
24 Mars Ave.
Warwick, R. I. 02889

RADIO BAZOOKA

BOB BURNS, RADIO COMEDIAN
By Ray Poindexter

From the length of galvanized pipe with a funnel on one end came a low-pitched, bass tone not unlike the voice of its player when he told tall tales of hillbilly humor. It was Bob Burns on the radio blowing the instrument he called the bazooka. His other airwaves feature was that of relating in his mountain drawl the experiences of his kinfolks back in his hometown of Van Buren (When he said it, the last word rhymed with "yearn"), Arkansas. Most of the people he mentioned were mythical; but some were real citizens of the sleepy hamlet on the Arkansas River in Crawford County at the state's western border. Such names as Aunt Bee, Uncle Fud, and Grandpa Snazzy were fictitious. but many listeners back home thought they recognized their live counterparts. The humorous situations Bob talked about were mostly an outgrowth of his boyhood experiences. Also, some local townspeople supplied him with up-to-date material after he became famous on the radio and in movies.



Bob Burns and Bing Crosby on the "Kraft Music Hall"

His first national recognition came when he appeared on crooner Rudy Vallee's radio show in New York in 1935. His country style was a sharp contrast to the show's star—a college type that sang into a megaphone and insisted in song that "My time is your time."

Burn's initial radio success led to his becoming a member of Bing Crosby's "Kraft Music Hall" in 1936. The program was heard over NBC each Thursday night at 9:00 o'clock CST. Crosby was by then an established Hollywood star, having first gained show business success as one of the Rhythm Boys with Paul Whiteman's Orchestra in 1927.

Left to right: Bob Burns with his bazooka, ventriloquist Tommy Riggs, Charlie McCarthy, Edgar Bergen, Rudy Vallee, and Joe Penner with his duck.

William Robert Burn (Bob added the 's' later) was born in 1896 at Greenwood, Arkansas, some twenty-five miles south of Van Buren. His mother ran a hotel, and his father was a civil engineer. After moving to Van Buren, Bob learned to play the mandolin; and his brother, two years older, played the guitar. One day some traveling musicians came to town. One member played a long piece of iron pipe and made it sound like a kazoo. This interested Bob. He took a piece of pipe from a horizontal bar in the backyard and tried to play it. His efforts resulted in only one note. The experiment didn't end with that. Next he bought a pipe about three feet in length and attached a funnel to one end. With that arrangement he was able to play an octave. He called the instrument a "gas-pipe" at that time. (In a movie, he once referred to it as "two pieces of pipe and an old whiskey funnel.")

Both brothers went to Chicago to work prior to World War I. Bob made eight dollars per week. When the U. S. entered the conflict, Bob decided to enlist. Across the street from where the boys stayed, there was an electric sign on the plant where the eye medicine Murine was made. Bob came to the room one day after joining the Marine Corps and said, "I'm a Murine".

After the war he bummed around, worked at odd jobs, and performed in vaudeville. Will Rogers, from the neighboring state of Oklahoma, is credited with advising him to talk about Arkansas folk. This, along with his bazooka, led to his great success. His stories were many and varied. One was about the time he was out hunting and saw a snake with a live frog in its mouth. He took a bottle of whiskey out of his pocket and pouted some of the liquid into the snake's mouth. The reptile in turn released the frog. A few minutes later, while still hunting, he felt something tapping his shoe. Looking down, he saw the same snake with another frog in its mouth.

On a fishing trip, he and his buddy were captured by some mosquitos. "Shall we eat them here or take them home with us," one of the insects asked.

"Let's eat them here," replied another. "If we take them home, the big mosquitos will get them."

During a baseball game, spectators wondered why all the players were crying until they learned that an onion was being used for the baseball.

Bob once told the radio audience that the level of table manners had risen back in Van Buren. "Now folks lick off their knife before they stick it in the butter dish."

In the October 10, 1936, edition of "Radio Guide", a portion of a story about stars' relatives was devoted to Bob:

Bing—So you believe in the truth, do you, Bob?

Bob—Certainly do, Bing. I always said the truth was man's

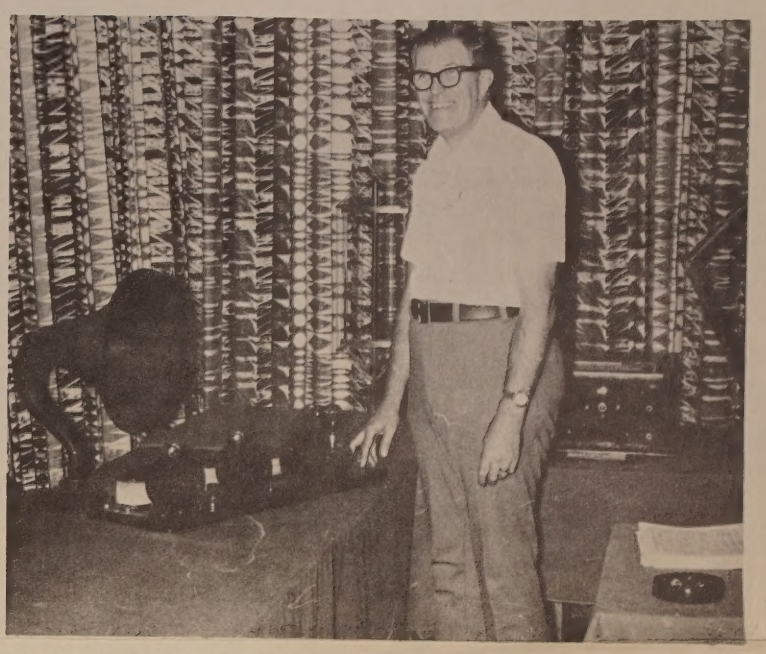
Continued on page 2

RADIO EXHIBIT

Mrs. Bob Lane visits the radio exhibit at the Nostalgia Convention in Dallas during July 11-14. Clarence Johnson, a collector of rare phonographs and radios, shows his sets to her.

Clarence Johnson, the proud owner of a DeForest D-10.

J. W. F. Puett points out some features of Scott and McMurdo Silver radios.



Walt Jackson, W5ZYA, with Walts Emporium just acquired the "AK" breadboard in a trade with Bob Lane of Kansas.

LETTERS

EDITOR'S MAILBAG

Union Carbide Corp.
Consumer Products Div.
99 Kinderkanack Rd.
Westwood, N. J. 07675
Gentlemen:

We recently acquired an antique radio (TONODYNE) which had three Eveready batteries in it. The radio had been in dry storage in an attic for many years.

Two of the batteries are Eveready # 771—each are 4-1/2 V C batteries. One of these C batteries is stamped "for best results put in service before June 1928", and the other is stamped "for best results put in service before July 1928". The reading on each of these 4-1/2 V batteries is 4.1 V. Measured today with a VTVM.

The third battery is a #768 B or C battery with voltages of 4-1/2, 22-1/2 and 16-1/2. The 4-1/2 V terminals measure 4V, and the 22-1/2 V terminals measure 20V, and the 16-1/2 V terminals measure 15V. Stamped on this battery is "for best results put in service before April 1928".

If we can find a full complement of tubes for this radio we will power it with this set of batteries.

We thought this might be of interest to you.

Sincerely,
Lee A. Davis
Route 3, Box 2203
Sumner, Wash. 98390
May 9, 1974

Dear Mr. Cranshaw:

This is a copy of a letter we sent to Union Carbide, which we thought might also interest you.

Sincerely,
Lee A. Davis

Dear Mr. Cranshaw:

I have been searching for a cross-reference list for military receiving tubes and common receiving tubes. For example, the military tube VT-67 tube replaces the common # 30 tube. So far I have not been able to obtain such a cross-reference. I would appreciate your help! I also subscribe to your newspaper and enjoy it very much.

Sincerely yours,
Bruce Harbeck
P. O. Box 1172
Sioux City, Iowa 51102

Hi Jim:

I started in radio about 1920. I never heard of SW in 1923 or police calls.

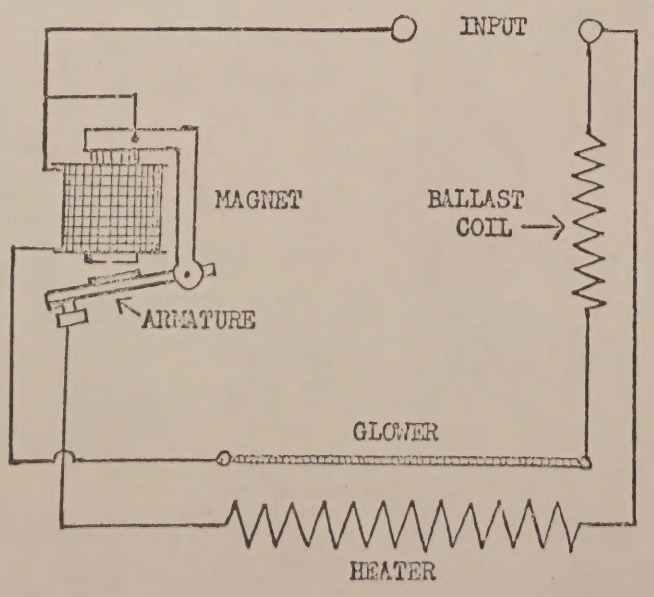
Smitty, W3BNO

Cross Keys.
ANTIQUE RADIO—50 Yrs. old. Reas. Exc. cond. Floor model, short wave & police calls.
ANTIQUE—Mirror names & milk cans. Beautifully restored & decorated

ELECTRIC LIGHT

For power, 220 volts was used on all multiple-glowers, but either 11 V or 220 V could be used on the single. Alternating current was recommended, although it would also work on direct current. The latter shortened the life of the glower by as much as one half. This was due to electrolytic action. A black deposit formed on the negative and extended gradually to the positive end. As the deposit increased the candle power and efficiency decreased. This problem did not exist with A C power.

Efficiency favored the Nernst Glower over the ordinary carbon lamp of equal intensity (one glower equal to approximately 16 C.P.) The initial efficiency of the glower was five lumens per watt as opposed to 3.4 for the carbon lamp. The former required about 88 watts per glower as compared to 175 watts for the carbon lamp. Another asset of our subject lamp was the daylight quality of its light. It gave off a dazzling white light, which necessitated some form of a milk-glass globe to surround the complete unit.



The Nernst Glower appeared on the American market in 1900 with distribution and patent rights assigned to the Westinghouse Co. of Philidelphia. The lamp disappeared in about 1912 and one of the reasons for its downfall was a new lamp known as The Meridian. This was the usual vacuum type bulb, but made tipless to make it more decorative, and in particular to compete with the Nernst Lamp. And it was cheaper to operate.

With the advent of Tungsten Lamps and that ever present competitor, "progress", both fell by the wayside. For twelve years, though, many city streets, galleries, stores and homes were lit by Nernst Glowers.

Floyd Lyons
456 Post Street
San Francisco, Calif. 94102

REFERENCES:

History of Electric Light -Henry Schroeder-1923
Electricity In Everyday Life Edwin J. Houston 1904
Hawkins Electrical Guide # 8-Hawkins & Staff- 1917
History of Incandescent Lamp Howell & Schroeder 1927

BOB BURNS...MORE....

best friend. Too bad my Uncle Si didn't stick closer to the truth. He was a champion liar and it was his ambition to be the champion hog-caller of Crawford County. He went all over the country calling hogs—he could call more hogs than all the other hog callers put together, but when he wanted to call his own hogs they wouldn't come. He was such a liar his own hogs wouldn't believe him.

When Bob is talking about his relatives, his favorite subject is uncles—he has five of them, and although he seldom uses their names in the scripts, their characteristics are easily recognized by the natives of Crawford County. Consequently, Bob and his uncles are generally on the "outs". However, when they become too indignant, Bob merely switches to some other unfortunate kinfolk.

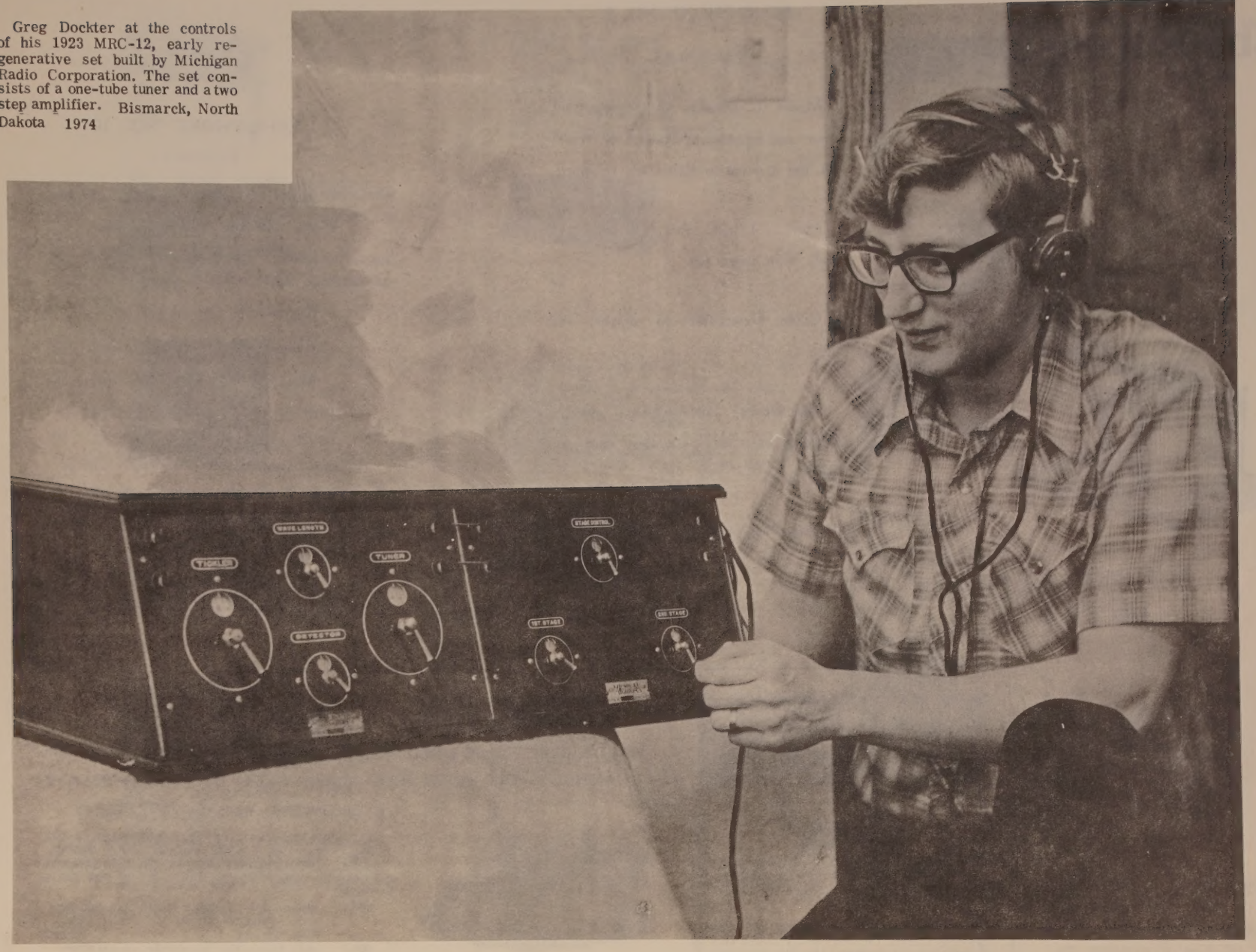
So naturally the relatives and other natives protest, threaten, and squawk loudly—which is all right by Bob—he's a long way from home.

Bob Burns' movie fame followed after his success on the radio. In 1936, he made his first Paramount picture. It was "Rhythm on the Range", with Bing Crosby and Martha Raye. "Waikiki Wedding" (again with Bing and Martha) and "Mountain Music" (with Bob as the male lead opposite Miss Raye) followed in 1937. Bob played the title role in "The Arkansas Traveler" in 1938. His movie and radio career continued until the early Forties when his land investments in the San Fernando Valley began to pay off handsomely.

During World War II, Bob performed an important duty by helping servicemen send messages to their families.

The Army named one of their rocket launcher weapons the "bazooka" because of its resemblance to his unique musical instrument. It was first used in 1942 during the Allied invation of North Africa and was especially effective against tanks and armored cars.

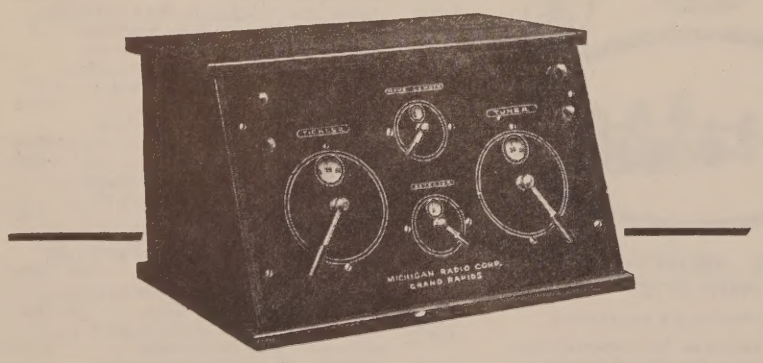
Bob lived on his ranch in the San Fernando Valley until in death in 1956 at the age of 60. His original fame had been as a performer at the microphone during radio's star-studded heyday.



Greg Dockter at the controls of his 1923 MRC-12, early regenerative set built by Michigan Radio Corporation. The set consists of a one-tube tuner and a two step amplifier. Bismarck, North Dakota 1974

MICHIGAN MIDGET

DETECTOR—$27. AMPLIFIER—$30.



The Sensation of Radio

No matter what you pay, you can't get a receiving set that will give you any better results than the Michigan "Midget."

Distance—It has received in Grand Rapids, stations from coast to coast.

Selectivity—The smallest turn of the dial throws out or brings in stations.

Clearness—The clearness of the reception will surprise and please you.

The Cost—You could not build a set, buying the parts yourself, at anything like the price at which the Midget is sold.

Made in these styles:

M 10 Midget Detector $27.00
M 11 Midget Amplifier $30.00
M 12 Midget Detector and Amplifier in one case.....$57.00

Ask your dealer to demonstrate this wonder to you.

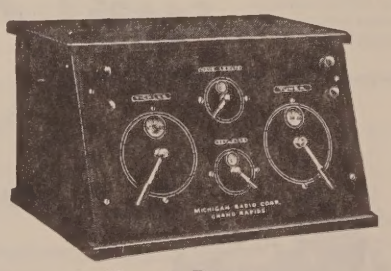
Write us for illustrated folder.

MICHIGAN RADIO CORPORATION
GRAND RAPIDS, MICHIGAN

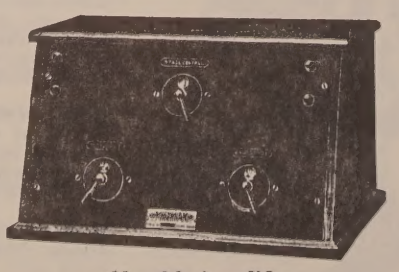
February 1924 ad.

MICHIGAN MIDGET

The Sensation of Radio



No. 10 Detector
$27



No. 11 Amplifier
$30

NEVER before have such quality sets been offered at anything like the price of the Radio Midget (both Detector Unit and Amplifier Unit).

Distance
Clearness
Selectivity

These three features stand out in the Michigan Midget and have truly made it "The Sensation of Radio." The quality of the materials and workmanship is the best and the engineering skill of design has made the Michigan Midget the long distance wonder.

Here is a set that tunes out local stations and brings in distant stations—clear and loud.

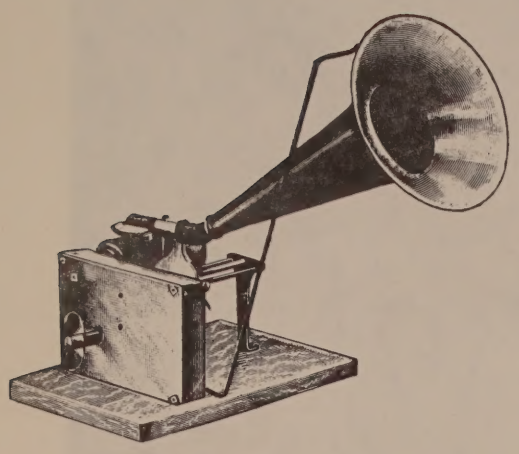
Go where you may—look over all the sets offered and then you will be more convinced than ever that there is nothing on the market to equal the Michigan Midget.

Send for catalog of other Michigan Quality Radio Products

MICHIGAN RADIO CORPORATION
GRAND RAPIDS, MICHIGAN

March 1924 ad

The Echo=Phone



ECHO-PHONE NO. 5.

PRICE $6.00.

ECHO-PHONE NO. 5.

EQUIPMENT.

Model 5 embodies all the important motor and reproducing features of Model 10, but it is not so elaborately equipped

Horn: 14 inch brass bell and steel body, with connection.

Crane: Detachable—to support the horn.

Base-Board: The machine is securely attached to a highly polished solid oak Base.

The Echo-Phone plays all standard cylinder records

Early Twentieth Century

ECHO-PHONE NO. 10.

EQUIPMENT.

Horn: 17 inch enameled Flower Horn, gold strip, with connection.

Crane: Detachable—to support the horn.

Reproducer: Concert size.

Cabinet: Highly polished Oak.

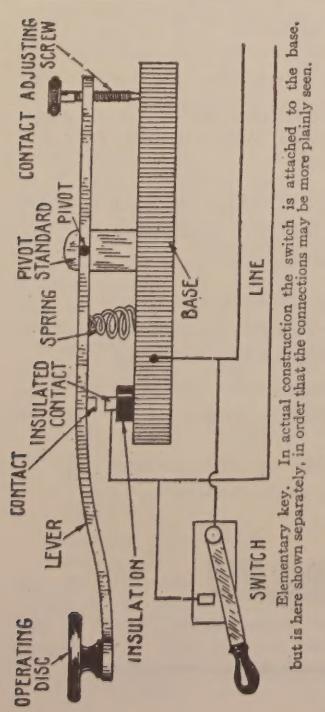
Motor: Extra heavy single spring encased in a powerful gear spring cup; can be wound while running and will play two records with one winding. The governor is driven by a metal worm gear, and the carriage is propelled by a 50-thread feed screw.

Finish: All outside metal parts are highly polished and white nickeled.

ECHO-PHONE CO.

"The whole difficulty lay in the fact that the manufacturers devote too much of their energy to the appearance and too little to the quality of their product," such a statement was the sales scheme for United Talking Machine Company, which manufactured these Echo-Phones from 259 Greenwich Street in New York.

The works of the 5 and 10 are exposed openly enough to see moving parts, a feature which attracts most collectors. For the original prices of $6.00 and $10.00 the Echo-Phone was a machine that was adequate in quality...to enhance a collection. Its simple method of form following function radiates its appealing character.

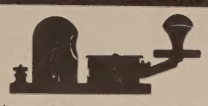


Elementary key. In actual construction the switch is attached to the base, but is here shown separately, in order that the connections may be more plainly seen.

Hawkins Electrical Guide #8, 1917, pp. 2204

50 YEAR OLD FLAME PROOF KEY
TYPE J-7-A

Gov't. Order No. 141082 Dated: 1921



Beautiful heavy duty construction, in new working condition. For the collector, antique buff and antique gear museums. An unusual conversation piece, curio, desk weight and gift.

In 1966 the U.S. Navy closed the hugh Brooklyn Navy Yard and the City of New York purchased the property. The J7A Keys were discovered in a warehouse where they had been stored for the past 50 years. Corrosion has been corrected, however, there is some slight paint peel. New boxes have been provided.

Both keys are of heavy duty construction with a large Navy type knob. The keying arm and dome are brass . . . the contacts are ¼ inch coin silver. The J7A is 2½ x 5½ inches and the J5A is 2½ x 3¼ inches in size. The BULB, or Lamp is NOT supplied with the J7A.

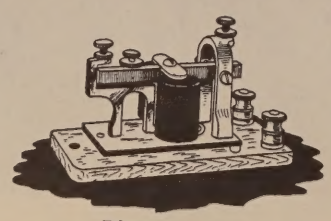
A RARE FIND! ORDER TODAY! **$12.95 ppd**

The J5A was made for the Signal Corps in 1941, and is the same type of Key except for the Dome housing the neon bulb. A real memento of WWII. Supply is somewhat limited . . . . buy today!

$11.95 ppd

EMPORIUM ... "a place of trade"

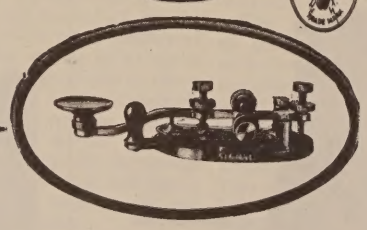
WALT'S (ELECTRONIC & OLD STUFF) EMPORIUM HAS A GOOD SELECTION OF ANTIQUE – OLD & NEW KEYS – BUGS – SETS – SOUNDERS – RELAYS

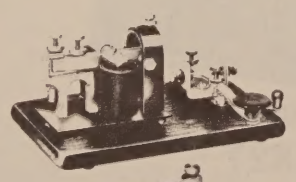


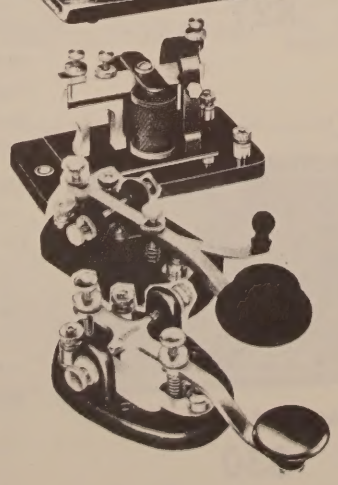
Telegraph sounder.

telegraphic relay.

LIMITED SUPPLY!







NEW KEYS – SOUNDERS – LEARNER SETS

PRICE INCLUDES POSTAGE & INSURANCE

Learner Set. Telegraph practice set. Bar frame steel, brass bridge and adjustment screws. Brass lacquer finish. Brass sounding bar—black lacquered steel sounder plate. Adjustable, brass finished key arm. Mahogany finished wood base, brass binding posts. rubber feet.
110.001 (4 ohms) **$29.45**

Telegraph Sounder. Designed for instant response, brass sounder provides clear, resonant tone. Steel bar frame, black enamel finish. Brass bridge and adjustment screws, instrument lacquer finish. Sounder plate is black lacquered steel. Mahogany finished wood base, brass binding posts and rubber mounting feet.
112.001 Sounder (4 ohms) **$24.50**

Heavy Duty Keys. Brushed brass with instrument lacquer finish, heavy die cast base. Improved Navy-type knob. Adjustable bearings and spring design give light keying touch. Large ¼" coin silver contacts.
322.003 Black wrinkle **$9.95**

Standard Keys. Heavy die cast base. Smooth adjustable bearings. "Cushion-contact" design provides smooth keying action. Provision for plugging in semi-automatic keys. ¼" coin silver contacts. A high quality key at a low cost.
310.003 Black wrinkle with switch **$10.50**

SOUNDERS – RELAYS – PONY RELAYS

ALL SOUNDERS, RELAYS, AND PONY RELAYS ARE USED. THEY HAVE BEEN CLEANED, BUT NOT POLISHED. FURTHER CLEANING AND FINISHING MAY BE DESIRED. MONEY BACK GUARANTEE IF NOT SATISFIED.

305.1	Western Union Telegraph Co Main Line Sounder, various mfgrs., white metal, wood base, model 17A, 120 ohms	$25.00
305.2	W.U. Tele Co Main line sounder, same as above features, model 15B, 120 ohm	25.00
315.1	J. H. Bunnell for W. U. Tele Co, 400 ohm, white metal, model 1B. (2 in stock)	28.00
315.4	Western Electric model 15B, BRASS	28.00
515.1	Western Electric RELAY, Sharp looking, some brass, on mahogany base on heavy iron base, 150 ohm. one only! Cleaned	40.00
515.2	Telegraph RELAY mounted on hvy. slate	29.00
615.1	PONY RELAY W U TELE CO. Small and neat looking, model 3D, 16 ohm. needs cleaning	27.50
615.3	PONY RELAY, model 4B, 140 ohm.	27.50
615.5	W U Tele Co., Model 3C, 16 ohm.	27.50

KEYS – SETS – POLE CHANGERS

115.2	C. T. E. Telephonics Navy knob, contacts enclosed, real nice key	$ 9.95
115.3	Western Union Telegraph Co POLE CHANGER KEY, STRAIGHT, with switch, used extensively by WU Telegraph Co. A very simple form of hand pole changer. Double contact, front and back, hard rubber base, Mfg. by Spies Electric Co., Type 1B	21.50
115.10	Signal Elect. Mfg. Co, Menomine, Michg. legless key, brass, steel arm	12.00
115.11	Key, Navy knob, legless	10.95
115.12	Brass Key, previous owner says he bought it used and used it for 40 years . . . knob shows many years of useage	9.95
115.13	KEY,-OLD- Brass, enamel over brass, shorting bar, mounted on walnut base, 3" x 5½", a real oldie that needs a home	14.95
115.14	KEY, label "BRACH" shorting bar on oak base, 3" x 5½", one only, hurry!	19.95
215.1	VIBROPLEX 81040, painted grey, good action, don't know model number.	22.50
215.2	Vibroplex, label removed, black crackle finish, real clean.	20.00
	SETS, LEARNER TYPE. These consist of a full size Morse Telegraph SOUNDER and KEY mounted on Walnut base. Enhances any Ham shack or OT	
415.1	MENOMINEE Set with key and Sounder, clean	45.00
415.2	KEY and Sounder set, clean, no label	40.00
415.3	Manhattan Elect. Supply Co Key and sounder clean and sharp looking	45.00
415.4	Mesco Set, base could use refinishing	35.00
415.5	BUNNELL Duplex key and Sounder set	45.00

SIGNAL

ORDERING NOTES

1. All orders shipped prepaid and insured
2. Shipped by Parcel Post or UPS (No UPS to PO Box)
3. Please PRINT NAME AND ADDRESS
4. 30 day money back guarantee if not satisfied
5. Orders shipped within 5 to 15 days

NOTE: All Old items are cleaned, BUT NOT POLISHED!

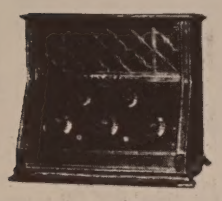
It is planned to print a new list each Jan, April, July, and Oct. To be assured a copy of each issue, please send a large (# 10) SASE. The contents will include Telegraph Keys, Bugs, Sounders, Relays, Radios, Telephones, and Technical Books.

WALTS EMPORIUM

P. O. BOX 19406 DALLAS, TEXAS 75219

WORKDAYS – 214-526-2023 ★ EVENINGS – 214-262-7855

TRADE NAME: "Workrite Aristocrat."
TYPE: Neutrodyne with built-in loud speaker.
TUBES: Five.
BATTERIES: Compartment in cabinet for "A" and "B" batteries.
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: $350.00 without accessories, but with loud speaker.
MANUFACTURER'S NAME: Workrite Mfg. Company.



TRADE NAME: "Workrite."
MODEL: Radio King.
TYPE: Neutrodyne with built-in loud speaker.
TUBES: Five.
BATTERIES: "A" and "B" needed.
CONTROLS: Three.
AERIAL: Inside or outside.
PRICE: $180.00 without accessories.
MANUFACTURER'S NAME: Workrite Mfg. Company.

TRADE NAME: Wright.
MODEL: 5A.
TYPE: Tuned radio frequency, detector and audio frequency.
TUBES: Five.
BATTERIES: "A," "B" and "C" furnished.
CONTROLS: Three.
AERIAL: Outside or inside.
PRICE: $160.00 including tubes and batteries.
MANUFACTURER'S NAME: H. Earle Wright.

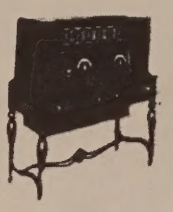
TRADE NAME: Zenith.
MODEL: Three R.
TYPE: Regenerative detector and three audio frequency.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
LOOP: Outdoor or indoor.
PRICE: $160.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: Zenith.
MODEL: Four R.
TYPE: Regenerative detector and three audio frequency.
TUBES: Four.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Outdoor.
PRICE: $95.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: Zenith.
MODEL: Super 7.
TYPE: Two stages tuned radio frequency, detector and 3 audio.
TUBES: Six.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: $230.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: Zenith.
MODEL: Super 8.
TYPE: Two stages tuned radio frequency, detector and three audio.
TUBES: Six.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: $250.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.

TRADE NAME: Zenith.
MODEL: Super 9.
TYPE: Built-in loud speaker.
TUBES: Six.
BATTERIES: None furnished.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: $350.00 without accessories.
MANUFACTURER'S NAME: Zenith Radio Corp.



TRADE NAME: Zenith.
MODEL: Super 10.
TYPE: Built-in loud speaker and battery eliminator.
TUBES: Six.
BATTERIES: House current employed.
CONTROLS: Two.
AERIAL: Indoor or outdoor.
PRICE: $550.00.
MANUFACTURER'S NAME: Zenith Radio Corp.

The Classic Radio

BY J. W. F. PUETT

In preparation for the biographical sketch on E. H. Scott to be concluded next month, we present Part One—a list of the sets manufactured by the laboratory both before and after Mr. Scott retired:

Herewith, our list, as complete as possible at press time. We would like to hear from anyone who can supply corrections or additions.

DATE	MODEL	STAGES RF	STAGES IF	REMARKS
1925 to 1929	AC SYMPHONY WORLD RECORD, 8, 9 & 10			very little known about this set 8, 9 & 10 tubes, respectively
1931	ALL WAVE 12	1	3	12 tubes two dial tuning
1933	ALL WAVE 12	1	3	12 tubes single dial tuning
1934	ALL WAVE 15	1	3	15 tubes with best freq. oscillator
	ALL WAVE 2V	1	3	11 tubes battery operation
1936	ALL WAVE HIGH FIDELITY	1	4	23 tubes
	Volume Range Expander			4 tubes-accessory
	QUARANTA			40 tubes-very little known
1937	PHILHARMONIC	1	4	30 tubes pointer dial 5/22/37
1938 to 1939	16 and 18	1	3	16 and 18 tubes 8/19/38
	SUPER XII	1	3	12 tubes 11/11/38
	MASTERPIECE	1	3	14 tubes 11/12/39
	PHANTON	1	3	19 tubes
	PHILHARMONIC revised	2	4	30 tubes beam of light dial
1940 to 1941	PHILHARMONIC COMBINATION	2	4	33 tubes FM built in no vol. ex.
	FM TUNER			10 tubes accessory
	LAURETTE	1	2	18 tubes 4/6/41
	PHANTOM revised	1	3	23 tubes with FM
WW II	SLR-12-A MARINE RECEIVER	1	2	12 tubes low radiation
1942 to 1945	RCH receiver			Type CZC-49587-low radiation
	SLRM MARINE RECEIVER	1	2	12 tubes AC/DC low radiation
	E. H. SCOTT RETIRES JULY 1945			
1946 to 1949	EXPORT RECEIVER	1	2	12 tubes AC/DC similar to SLRM circuit
	500 AM/FM	1	2	same as Radio Craftsman RC-8 tuner
	800B AM/FM/SW	1	2	24 tubes electric tuning remote control
	1500 AM/FM/SW			very little known
1950	310	1	2	12 tubes 25/5/50
	510, 510K, 510S	1	2	14 tubes
	515	1	2	13 tubes similar to 510 series

VARIOUS OTHER MODELS FOLLOWED—some with TV Models 710, 910, 924, and 1000TC.

9 Tube Super-Heterodyne "Coast to Coast" Variable Mu-Pentode Push-Pull Receiver.

Requires 3-225, 2-227, 1-224, 2-247, 1-280 *Tubes.*

CONSISTS MAINLY OF POLYMET PARTS!

All the parts come to you bolted to a durable and attractively finished steel chassis, measuring 15 in. long, 11½ in. wide, by 8¾ in. tall. Note also the 3 Electrolytic Condensers (24 Mfds. Total!)—assuring Hum-Free Reproduction! Exclusive Features: High-shielded 4-gang Amsco-De Jur Oscillator Tracking Section Condenser, Traveling Spot Light Vernier Tuning Dial, Three 175 K.C. Shielded I.F. Units, Band Pass R.F. Transformer, Twin Jacks for Phono Pick-up (or Microphone), and additional Dynamic (A.C.) Speaker (or up to 100 Magnetics or Television Lamp), Shielded R. F. Tubes, Volume Control, Tone Control. A.C. Line Switch, Phono Pick-up, Radio Switch. Socket Provision for Connections of 5-Prong Speaker Plug.

Furnishes FIELD EXCITATION for a 2500 ohm D.C. DYNAMIC SPEAKER.

Semi-Assembled ——— **$34.50**

Factory Wired ——— **$44.50**

Matched Jensen "Concert" D.C. Dynamic Speaker ——— **$11.45**

1932

General Electrical Synchronous Phono. Motor

Complete with a felt lined turn-table. Turntable revolves at the exactly prescribed rate, despite any voltage variations. Only 3¼ in. deep! 110 volt, 50-60 cycle A.C. For **$3.75**

1932

R.C.A.-Victor-Kellogg Recording and High Gain Speech Microphone

For hand use—6½ in. long. HIGHEST QUALITY OBTAINABLE! **$3.95**

Magnetic Speaker Chassis

Burtex cloth diaphragm. Oversize tungsten steel magnet. Will NOT DISTORT or RATTLE — despite terrific volume requirements! Over-all diameter sturdy steel chassis: 9 in. — 5⅞ in. deep! The shell partly serves as a SELF-BAFFLE! Ideal for use in MULTI-SPEAKER PUBLIC ADDRESS INSTALLATIONS. Each ——— **$2.95**

1932

R. C. A. Loudspeaker 103

A beautiful speaker, superb in its faithful reproduction. Molded frame and pedestal resemble hand carved oak. Mechanism concealed by attractive tapestry.

(Genuine R.C.A.)
List $18.00

OUR PRICE ——— **$3.43**

1901 TALKING MACHINE SUPPLIES

Summary of Disc Machine Horns to be Used with Leather Elbows

Length	Width Bell	Depth Bell	Width Throat	List	Description
14½ in.	9⅝ in.	2½ in.	5 in.	$1.50	All Brass
14½ in.	9⅝ in.	2½ in.	5 in.	1.50	B. B. Jap. Top
19 in.	11⅜ in.	4 in.	6⅜ in.	3.50	All Brass
19 in.	11⅜ in.	4 in.	6⅜ in.	3.50	B. B. Jap. Top
27 in.	14 in.	3½ in.	6¾ in.	5.00	All Brass
27 in.	14 in.	3½ in.	6¾ in.	5.00	B. B. Jap. Top
40 in.	20½ in.	4⅞ in.	10 in.	12.00	All Brass
40 in.	20½ in.	4⅞ in.	10 in.	12.00	B. B. Jap. Top

Leather Elbows for Disc Machine Horns

No. 602, BLACK LEATHER
No. 603, RUSSET LEATHER

Price, 40 Cents

Of best selected stiff leather, neatly sewn and made of proper diameter to fit the Sound Box and Horn.

MART

EASY COST CHART

FOR CLASSIFIED ADS

No. Words	One Issue	Two Issues	Three Issues	Twelve Issues
1-25	1.35	2.45	3.45	12.75
26-30	1.70	2.90	4.15	15.30
31-35	1.95	3.40	4.80	17.80
36-40	2.25	3.90	5.50	20.35
41-45	2.50	4.40	6.15	22.95
46-50	2.75	4.80	6.85	25.45
51-55	3.05	5.30	7.55	28.00
56-60	3.30	5.80	8.25	30.55
61-65	3.65	6.30	8.95	33.05
66-70	3.90	6.75	9.65	35.60
71-75	4.15	7.25	10.30	38.20
76-80	4.45	7.75	11.00	40.75
81-85	4.70	8.20	11.70	43.25
86-90	5.00	8.70	12.35	45.80
91-95	5.25	9.20	13.05	48.40
96-100	5.50	9.65	13.75	50.90
101-110 ..	6.05	10.65	15.15	56.00
111-120 ..	6.60	11.55	16.50	61.00
121-130 ..	7.20	12.55	17.85	66.20
131-140 ..	7.75	13.50	19.25	71.25
141-150 ..	8.25	14.45	20.65	76.30

5c per word per issue over 150 words

Photo ads $2.00 extra.

MISC.

CLASSIC and ANTIQUE RADIOS and Mechanical Phonographs restored, bought, sold. Reproducers and Magnetic Pickups rebuilt. Send SASE for parts and services available. Twentieth Century Talking Machine Co., 856 Cole St., San Francisco 94117. MO 4-0469.

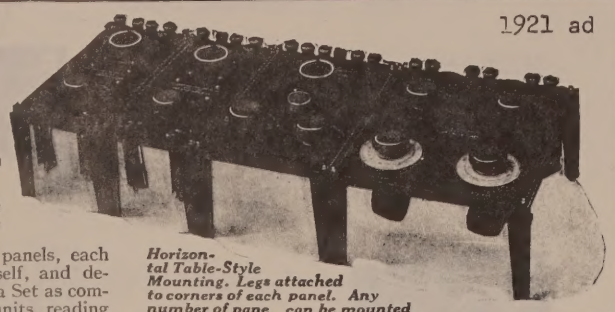
COLLECT old phonographs and records? We have a publication for you called, "The New Amberola Graphic", and will send a sample for 25¢. Our line of reprinted materials is expanding, and we'd be happy to send our circular. NAPCO, 133 Main, St. Johnsbury, Vermont 05819.

1921 ad

De Forest RADIOPHONE
REG. U.S. PAT. OFF.

INTERPANEL SET

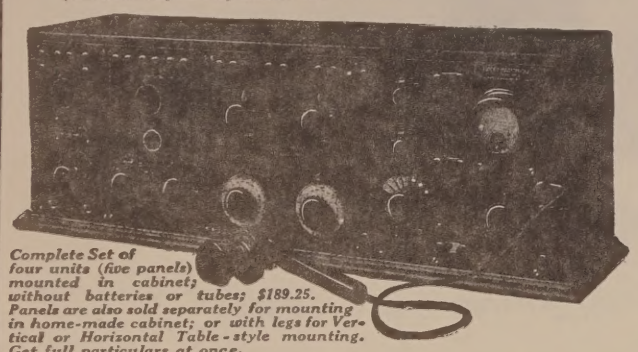
The Most Advanced Idea in Radio Telephone Transmitting and Receiving Apparatus



Horizontal Table-Style Mounting. Legs attached to corners of each panel. Any number of pane can be mounted in this style. Ample space under panels for batteries. Very convenient and inexpensive method of mounting.

THE INTERPANEL Set consists of a series of panels, each comprising a complete piece of apparatus in itself, and designed to be combined with other panels, thus making a Set as complete as desired. The Set shown *below* contains these units, reading from right to left in the picture:

Complete Radiophone Transmitter, transmitting speech at least 30 miles; *Type OT-3*; two panels;
Complete short wave Tuner of highest efficiency; Type MT-100; one panel;
New Audion Control panel designed especially for tubes of the gaseous type, now considered as standard; Type MP-100; one panel; and
One-step Amplifier complete in every respect; Type MP-200; one panel. (Additional steps of amplification may be added).



Complete Set of four units (five panels) mounted in cabinet; without batteries or tubes; $189.25. Panels are also sold separately for mounting in home-made cabinet; or with legs for Vertical or Horizontal Table-style mounting. Get full particulars at once.

PANELS are all 9 inches high, varying widths. Adaptable to any operating requirement and when placed side by side all binding posts are in line and convenient to wire.

30 Miles Range for the Telephone Transmitter on Average Amateur Antenna.

Only one 6-volt battery required for all filaments and microphone; motor-generator, "B" battery or rectifier supply may be used.

Send Now for Catalogue "E"

Get full details and place your order early to assure quick delivery.

De Forest Radio Tel. & Tel. Co.

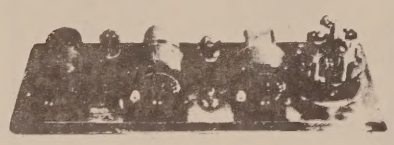
Inventors and Manufacturers of High Grade Radio Apparatus.

1415 Sedgwick Ave. New York City

Vintage Radio

NEW 1973 VINTAGE RADIO

Enthusiastic readers bought out our first edition. Now you can send for the fascinating new edition of this pictorial history of wireless and radio, 1887-1929. It's the collector's bible, with 263 pages and over 1,000 illustrations. Available in handbook or deluxe hard cover.

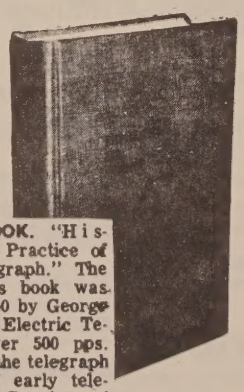


McMAHON'S 1921-1932 GUIDE

Be an instant expert. Lists 9,000 radio models by maker and year introduced, with original price, description and circuit type. A must for every radio buff or antique collector.

Vintage Radio, handbook $4.95

McMahon's 1921-32 Radio Guide 3.95



TELEGRAPH BOOK. "History, Theory & Practice of the Electric Telegraph." The orig. copy of this book was first printed in 1860 by George Prescott, Supt. of Electric Telegraph lines. Over 500 pps. of information on the telegraph & many illus. of early telegraph equipment. Reprints of this book $7.50 ea., ppd.

BACK ISSUES

ORDER NOW!

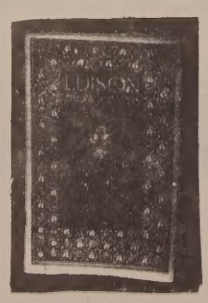
THE HORN SPEAKER NEWSPAPER

All 10 back issues for 1973 $5.00

January '72	25¢ ea.
February '72	$1.00 ea.
March '72	$1.00 ea.
April '72	$1.50 ea.
May '72	50¢ ea.
June '72	50¢ ea.
August '72	50¢ ea.
September '72	75¢ ea.
October '72	75¢ ea.
December '72	25¢ ea.

All 20 back issues for 1972 and 1973, while they last...$10.00.

Any issue from Jan.'73 to now..50¢ ea.



EDISON PHONOGRAPHS 1912-13 (Cylinder Models)," illustrated 5 x 8" catalog reprint. $3.00 ppd. Satisfaction guaranteed.

THE FABULOUS PHONOGRAPH

From Edison to Stereo

New and Revised Edition

by Roland Gelatt

Ever since 1877 when Thomas Edison invented a curious tin-foil apparatus to reproduce sound, the phonograph has provided entertainment and the delights of music for millions of listeners.

Roland Gelatt's history of this truly fabulous invention is a classic work in its field, and this revised edition covers new developments in stereo, recordings, and tapes.

$9.95

Special Announcing: New limited reprint of S. Gernsback's 1927 RADIO ENCYCLOPEDIA, a priceless record of old-time wireless and radio. Choice of hard-cover or handbook. 175 pages, 1,000 subjects.

Radio Encyclopedia, hard cover 12.95

The Horn Speaker Book Sales

Box 12 Kleberg, Texas 75145

Send PLEASE PRINT

☐ Enclosed is $

Name

Address

City State Zip

MISC.

WILL DUPLICATE exactly, the mutilated panel for your antique radio. Send sketch or rubbing for quotation, or will trade for antique radios of equal value. Aladdin Name Plate Co., 22 Forest St., Branford CT 06405.

LOW RATES ON OLD RADIO PROGRAMS; Also avaliable: 1929 Atwater-Kent radio commercial. Send 10¢ stamp for information. BRC QUALITY DUBS, 17173 Westbrook Drive, Livonia, Michigan 48152.

Will Repair, restore, refinish, renew or rebuild your old radio. Buy, sell or trade tubes, parts and radios. Bob Lucas, 9014 Mahoning, Houston TX 77036.

FOR SALE: Rubber stamp with your name and address plus AK Radio and speaker $3.00 pp. James Fred, P. O. 42, Rossville IN 46065.

1921-1931 schematics and service data where available $2.00. Cecil Bounds, Pine Springs Rte., Carlsbad, N. M. 88220.

FOR SALE OR TRADE

TWENTIETH CENTURY COLUMBIA, case good and good working condition, no horn, $475.00, or trade. Bill Boruff, 1619 Day Star, Dallas TX 75224.

ANTIQUE Televisions from 1930s to 1940s. Hallicraftors, Pilots, RCA, Transvision, Philco, Andera, Crosley, more. Send $1.00 for picture and information. Seidel, 614 Grove Lane, Santa Barbara CA 93105. Pho: 805-687-7967.

FOR SALE: Western Electric VT5, new in original ctn. (sealed-never opened) $7.50 each, plus postage. Also, new VT5, good filament, unboxed, $5.50 ea. plus postage. Please enclose estimated postage with your order - unused money will be returned. Floyd Lyons, 456 Post St., San Francisco CA 94102. Ph: 415-392-6600.

FOR SALE TUBES: 71-A, new boxed surplus, $3.00. CX374, old style, used, $2.00. CX374 stenciled 'Property of Atwater Kent Mfg. Co.' $4.00. 81 old style, used, $4.00, 2A7, new RCA boxed $3.00. Add $1.00 shipping. Alan Douglas, Box 225, Pocasset MA 02559.

ONE LOT PRICE: 70-set collection of Antique Radios (Federal, Kennedy, A-K, Grebe, Crosley, etc.,) including speakers tubes, etc., $3200. Stamped envelope for list. Crocker, Tavern Path, Plymouth, Mass. 02360.

FOR SALE: Rare magazine, First issue Vol. 1, #1, March 1928 of "Television". Stated the worlds first Television Journal. Published in Great Britain. Mint Condition, best offer. Guy Martin, P. O. Box A, Azusa CA 91702.

FOR SALE OR TRADE

FOR SALE:
GREBE, one tube regen receiver, model CR-8, mint original...$175.
GREBE, 2 stage audio amplifier model RORK, mint, original...$75.
RADIOLA III, Beautiful condition, with 2 good black base WD-11s..$70.
MCMURDO SILVER, Chromium plated 20 tube classic Masterpiece VI, complete with chromium cover and original Jensen 14" speaker. Absolutely mint condition.....$225.
ATWATER KENT, model 20 large, with brass binding posts.....$70.
CROSLEY, 3 tube Trirdyn, early model, fine condition.....$75.
KEN-RAD,1920 crystal set. Never used, still in original factory container.....$85.
Hans R. Hermann, Box236, Fisher St., Franklin, Mass. 02038.

AERIOLA SR. receiver with replacement tube $70.00.
MOTOROLA T. V. with 8" screen, working, late 1940s $75.00.
VOLUME II AND III Riders $10.00 ea.,
TUNGAR battery charger $5.00.
RADIO BROADCAST for June and August 1925 $3.00 each.
QST for October and November $3.00ea.
RADIO NEWS Amateurs handibook Vol.1 1924 $6.00.
POPULAR SCIENCE,2 bound volumes 1917 $13.00.
TWO GLASS NEGATIVES of New York $10.
01A tubes $5.00 each. Postage extra. Lonny Simonian, 6222 E. Townsend, Fresno CA 93727.

FOR SALE: Two sets of Tyne's "SAGA OF THE VACUUM TUBE" (23 issues - Radio News) $49.50 per set, plus postage. Floyd Lyons, Elks Club, 456 Post St., San Francisco, CA 94102.

FOR SALE: Over 65 radio fiction hard back books. All the Radio Boys Series, Radiophone Boys, Motorboat Boys, etc., $2.50 each. Send SASE for list. Guy Martin, Box A, Azusa CA 91702.

WD11 Adaptors, use UX199, 120, VT24. No wiring changes, Radiola III's battery hook up included $5.25 pp., 2 for $9.25. Keith Parry, 17557 Horace St., Granada Hills CA 91344.

FOR SALE: Type 864 (VT-24) tubes. New guranteed. Electrical replacement for WD-11, WD-12, etc. $2.00 each, postpaid. Quantity Limited. Len D'Airo, Box 54, Massapequa Park, N. Y. 11762.

FOR SALE-400 Radios, etc., as a lot (no list) interested people stop in. Open Thursday, Friday and Saturday 11 AM to 5 PM. Pat Cutini, 969 Genesee, Buffalo, N. Y.

FOR SALE: Vols. 1-14 Riders - Best offer over $100. plus shipping, or trade for good loose coupler (factory made). Dick Brewster, 1 Concord RD., Fishkill, N. Y. 12524.

FOR SALE: Vintage radios, reproducers and headphones. Send SASE for list to Arthur Harrison, 1021 Falcon Drive, Columbia, Missouri 65201.

FOR SALE: Crosley Pup, refinished to excellent condition $75. G. B. Schneider, 6848 Commonwealth, Parma Hgts, Ohio 44130.

FOR SALE: #10 Atwater-Kent "breadboard radio, good condition. George Miller, 6537 Turner Way, Dallas TX 75230.

FOR SALE OR TRADE

TUBES - WD-11, WD-12, 201A, 199, 216A, 211A, Vt-1, VT-2, 203A, 226, 227, 245, 280, 224A, many with brass bases, many other types. SASE for large list. Also for sale; Crosley power supply, 1922 - 1942 Radio flyers and catalogs, W. E. telephone operators breast plate mike and headphone, 3 tube aircraft receiver, W. E. color TV monitor, old audio oscillator. Cecil Bounds, Pine Springs Rte. Carlsbad, N. M. 88220.

FOR SALE: Battery radios from 1920 to 1945 (portables) crystal sets, tubes, parts, speakers, headphones, shortwave sets, magazines, books, early electric sets, cathedral radios, "A & B" Elms, tube testers, chassis, wood cab's. Perfer to sell local, you pick up. Krantz, 714 White Horse Pike, Stratford, N. J. 08084. Ph; 609-783-0400.

WANTED

WANTED: For Federal Model 61 Audio interstage transformer, Antenna - loop control, main tuning condenser. For Stromberg 635 AC treasure chest, cabinet lid and metal feet. P. Ciancia, 10 Glenwood Ave., Leonia, N. J. 07605.

WANT EARLY Radio Magazines pre-1925. Have many duplicates of years 1930 - 1949 of Radio News, Short Wave Craft, Radio Craft, Service, etc., to trade or sell. Nothing over $1.50. Five page list 50¢. Collectorium, 2414 Edison Hwy., Bakersfield CA 93307.

WANTED: David Grimes Inverse Duplex Model 4DL; Hammarlund Roberts HiQ6 battery set; Westinghouse R. E. antenna tuner; Westinghouse A. R., R. F. amplifier. J. Albert Warren, Box 279- Church St., Waverly PA 18471.

NEED lower half Edison Cygnet Horn, motor or parts for Columbia AH disc outside horn phonograph, also cylinder record cabinet. Thurman Justus, Rt. 1, Box 1222, Spanaway, Washington 98387.

WANTED for historic research; Any information or material concerning television broadcasting in the Los Angeles area before 1945. Steve Runyon, 727 Quintara, San Francisco 94116.

WANTED: Early Multi-Band or high quality short wave receivers. Also any Scott or McMurdo Silver De-Luxe Models. John L. Glisson, 1303 Pump Road, Richmond, VA 23229.

WANTED: Old radio books, catalogs, Gernsback manuals, Early test equipment. Give price in first letter. William Hemrick, Route 1, Terra Alta, West Virginia 26764.

WANTED: Record catalogs and supplements early 1890-1940. Also dealer numerical catalogs, for research. Reply guaranteed. T. Brooks, 1940 80th, Jackson Heights, N. Y. 11370.

WANTED: Lid for an Atwater Kent Model 46, need not be perfect, minor dents or rust OK. Ted McMullen, 1730 Ridge Road, Bakersfield CA 93305. Ph: 805-323-0136.

puett electronics | 3008 ABSTON DRIVE MESQUITE, TEXAS 75149

TUBE LIST No. 9A all prices subject to change without notice.

HOW TO ORDER:
(1) Make all checks or money orders payable to J.W.F. Puett.
(2) Please state whether new or used tubes are desired and whether a reduced-price used tube is desired when a new tube is out of stock. REFUNDS are mailed with your invoice for out-of-stock tubes, or when, by customer request, a used tube is substituted for an out-of-stock new tube.
(3) All orders are shipped parcel post - no C.O.D. INCLUDE 15% FOR POSTAGE & HANDLING. INSURANCE RATES ARE 30¢ for orders under $50.00. TEXAS RESIDENTS ADD 5% STATE SALES TAX. MINIMUM ORDER $3.00.

ALL TUBES ARE THOROUGHLY TESTED on a mutual conductance tube checker before shipment. CUSTOMER SATISFACTION GUARANTEED -- If you are not satisfied with your order for any reason, tubes may be returned within ten days for refund or replacement with exception of tubes which are shorted or have open filaments. It will be assumed that returned tubes with open filaments or shorts were damaged in shipment. Shipping damage claims will be handled promptly through the post office on insured orders. Puett Electronics assumes no liability for orders which are not insured, and no liability beyond that which is covered by postal insurance.

IN TABLES 1, 4 & 6 THE SYMBOL n INDICATES THAT A TUBE IS AVAILABLE NEW AND THE SYMBOL u INDICATES THAT IT IS AVAILABLE USED.

TABLE 1 - OLDER TYPE-NUMBER TUBES - prices listed for new tubes used tubes are half new price

0	u	$4.	5Z3	nu	$2.	6ZY5	nu	$3.	14C5	n	$3.	55	n	$3.	
1A3	n	$3.	5Z4	nu	$2.	7A4	nu	$3.	14C7	n	$3.	56	nu	$3.	
1A4	nu	$3.	6A3	n	$3.	7A5	n	$3.	14F7	n	$3.	57	u	$3.	
1A5	u	$3.	6A4	nu	$4.	7A6	nu	$3.	14F8	n	$3.	58	u	$3.	
1A6	n	$3.	6A5	n	$3.	7A7	nu	$3.	14H7	n	$3.	59	n	$3.	
1A7	nu	$2.	6A6	nu	$3.	7A8	nu	$3.	14J7	nu	$3.	70A7	n	$3.	
1B4	n	$2.	6A7	nu	$4.	7AF7	nu	$3.	14N7	n	$3.	70L7	nu	$3.	
1B5	u	$3.	6A8	nu	$4.	7AG7	nu	$3.	14Q7	nu	$3.	75	nu	$3.	
1C5	nu	$3.	6B4	nu	$4.	7AK7	u	$3.	14W7	n	$3.	76	nu	$3.	
1C6	n	$3.	6B5	nu	$4.	7B4	nu	$3.	14X7	n	$3.	77	nu	$3.	
1C7	u	$4.	6B6	nu	$4.	7B5	nu	$3.	15	u	$5.	78	nu	$3.	
1D5	u	$4.	6B7	nu	$4.	7B6	nu	$3.	19	nu	$3.	79	nu	$3.	
1D8	nu	$4.	6B8	nu	$3.	7B7	u	$3.	24A	nu	$3.	80	nu	$2.	
1E5	u	$3.	6C5	nu	$2.	7B8	nu	$3.	25A6	n	$3.	81	u	$5.	
1E7	n	$3.	6C6	nu	$3.	7C5	nu	$3.	25A7	nu	$3.	82	u	$3.	
1F4	n	$3.	6C7	n	$3.	7C6	u	$3.	25B6	u	$3.	83	n	$3.	
1G4	nu	$3.	6C8	nu	$3.	7C7	nu	$3.	25C6	u	$3.	84	nu	$3.	
1G5	u	$3.	6D6	nu	$3.	7E6	u	$3.	25L6	nu	$2.	85	nu	$3.	
1G6	u	$2.	6D7	n	$3.	7E7	nu	$3.	25S	u	$3.	89	n	$3.	
1H4	u	$3.	6E6	n	$3.	7F7	nu	$3.	25Z5	nu	$2.	117-L7	nu	$4.	
1H5	nu	$3.	6E7	u	$3.	7F8	nu	$3.	25Z6	nu	$2.				
1H6	nu	$2.	6F5	nu	$3.	7G7	u	$3.	26	nu	$4.	117-Z6	nu	$3.	
1LA4	n	$3.	6F6	nu	$3.	7H7	u	$3.	26A6	n	$3.				
1LA6	nu	$3.	6F7	nu	$5.	7J7	n	$3.	26A7	nu	$3.	9002	n	$3.	
1LB4	nu	$3.	6F8	nu	$2.	7K7	u	$3.	27	u	$3.	9003	n	$3.	
1LC5	n	$3.	6G6	nu	$3.	7L7	nu	$3.	28D7	nu	$3.	VT52	u	$4.	
1LC6	n	$4.	6H6	nu	$2.	7N7	nu	$3.	30	u	$3.	XXB	n	$3.	
1LD5	nu	$3.	6J5	nu	$3.	7Q7	nu	$3.	31	nu	$3.	XXFM	u	$3.	
1LE3	n	$4.	6J7	nu	$3.	7R7	n	$3.	32	n	$3.	XXL	nu	$3.	
1LF3	n	$4.	6J8	u	$3.	7S7	nu	$3.	32L6	u	$2.				
1LG5	n	$3.	6K5	nu	$3.	7V7	nu	$3.	32L7	n	$3.				
1LH4	nu	$3.	6K6	nu	$3.	7X6	n	$3.	33	n	$3.				
1LN5	nu	$3.	6K7	nu	$3.	7X7	u	$3.	34	nu	$3.				
1N5	nu	$3.	6K8	nu	$3.	7Y4	nu	$3.	35	u	$3.				
1P5	nu	$3.	6L5	n	$3.	7Z4	nu	$3.	35Y4	u	$2.				
1Q5	nu	$2.	6L6	nu	$3.	12A7	nu	$3.	35Z3	nu	$2.				
1V	n	$4.	6L7	nu	$3.	12A8	u	$3.	36	u	$3.				
2A3	nu	$5.	6N5	n	$3.	12B7	u	$3.	37	u	$3.				
2A4	nu	$4.	6N6	nu	$3.	12B8	u	$3.	38	nu	$3.				
2A5	u	$3.	6N7	nu	$3.	12C5	nu	$3.	39	nu	$3.				
2A6	nu	$3.	6P5	nu	$3.	12C8	nu	$3.	41	nu	$3.				
2B7	nu	$3.	6Q7	nu	$3.	12F5	n	$3.	42	nu	$3.				
3C6	n	$3.	6R7	nu	$3.	12J5	nu	$3.	43	nu	$3.				
3LF4	n	$3.	6S7	nu	$3.	12J7	nu	$3.	44	nu	$3.				
3Q5	nu	$2.	6S8	n	$3.	12K7	nu	$3.	45	u	$4.				
5R4	u	$2.	6T7	u	$3.	12K8	nu	$3.	46	nu	$4.				
5T4	nu	$2.	6T8	n	$2.	12Q7	nu	$3.	47	nu	$5.				
5U4	nu	$2.	6U6	nu	$3.	12Z3	u	$3.	48	n	$5.				
5V4	nu	$2.	6U7	nu	$4.	14A4	n	$3.	49	n	$4.				
5W4	nu	$2.	6V6	nu	$2.	14A7	u	$3.	50A5	nu	$2.				
5X4	nu	$2.	6V7	nu	$3.	14B5	n	$3.	50C6	n	$2.				
5Y3	nu	$2.	6Y6	nu	$2.	14B6	nu	$3.	50X6	nu	$3.				
5Y4	nu	$2.	6Z4	nu	$2.	14B8	n	$3.	51	u	$3.				

ADDITION:

2E5	n	$4.
6G5	n	$3.
10/VT-25	n	$4.

WE HAVE A FEW OLD RADIO TECHNICAL BOOKS - send S.A.S.E. for list.

TABLE 2 - OLD STYLE GLASS ENVELOPE TUBES

all are used, thoroughly tested
Tube type numbers are listed under manufacturers names.

Ace:		Cunningham:		Magestic:		Philco:		Radiotron:		Sylvania:	
X-224	$3.	C324	$4.	G27	$3.	24	$3.	UX222	$4.	ST224	$4.
Arcturus:		CX326	$4.	G35S	$3.	26	$4.	UY224	$4.		
(blue glass)	C327		$3.			27	$3.	UY227	$3.	SX280	$2.
No. 27	$5.	CX332	$4.	National		36	$3.	35	$2.	Tung Sol:	
No. 51	$5.	CX345	$4.	Union:		37	$3.	UX245	$4.	24	$3.
Crosley:		56	$3.	NY224	$4.	80	$2.	56	$3.	Wizard:	
56	$2.	CX371	$5.	39	$2.			71A	$5.	226	$4.
Ken Rad		80	$2.	Ferryman:							
UX245	$4.	CX380	$3.	FA-224	$4.						
56	$3.										

WD-11 substitute TYPE 864 - $2.00 each

TUNGAR BULBS new .5,2 or 15 amp - $3.00 ea

TABLE 3 - TUBE COLLECTOR SPECIALS

Radiotron:		Cunningham:		Majestic:	
10 used	$5.00	CX350 used	$6.00	A.P.(rectifier) used	$5.00
WX12 used	$7.00	De Forest		Raytheon:	
UX200 new	$9.00	Audion:		B-H (rectifier) used	$5.00
used	$5.00	450 used	$6.00		
UX240 used	$5.00				

WESTINGHOUSE PROJECTION BULB TYPE T20 C13F 500W - new $5.

VISITRON (photo cell)- new $5.
WE212F used $15.00
852 used $15.00

TABLE 4 - MORE RECENT TUBE TYPES - prices listed for new tubes used tubes are half new price

0A2	n	$2.	6AT6	nu	$2.	12A5	nu	$3.	35Z5	nu	$2.	1629	u	$3.	
0A3	u	$2.	6AU6	nu	$2.	12A6	nu	$3.	35Z6	nu	$3.	1633	u	$2.	
0B3	u	$2.	6AV6	nu	$2.	12AT6	nu	$2.	40Z5	u	$3.	1634	u	$2.	
0C3	nu	$2.	6BA6	nu	$2.	12AT7	u	$2.	45Z3	n	$3.	1635	u	$2.	
0D3	nu	$2.	6BE6	nu	$2.	12AU6	nu	$2.	45Z5	nu	$3.	2050	nu	$3.	
0Y4	n	$3.	6BJ6	nu	$2.	12AU7	nu	$2.	50B5	nu	$2.	2051	nu	$3.	
0Z4	nu	$3.	6C4	nu	$2.	12AV6	nu	$2.	50C5	nu	$2.	5686	n	$2.	
1L4	n	$4.	6J6	nu	$2.	12BA6	nu	$2.	50L6	nu	$2.	5691	n	$2.	
1L6	n	$5.	6S4	n	$2.	12BE6	nu	$2.	50Y6	nu	$3.	CK-			
1R5	nu	$2.	6SA7	nu	$3.	12L6	nu	$3.	50Y7	nu	$3.	5703	u	$2.	
1S4	n	$1.	6SB7	nu	$3.	12SA7	nu	$2.	117-Z3	nu	$3.	5749	u	$2.	
1S5	nu	$2.	6SC7	nu	$2.	12SC7	n	$3.				5751	nu	$2.	
1T4	nu	$2.	6SD7	nu	$3.	12SF5	n	$2.	117-Z4	u	$3.	5814	n	$2.	
1T5	nu	$2.	6SF5	n	$2.	12SF7	n	$2.				5879	n	$2.	
1U5	nu	$2.	6SF7	n	$2.	12SG7	nu	$3.	807	nu	$5.	5881	u	$4.	
2C26	u	$3.	6SG7	nu	$3.	12SH7	n	$3.	879	n	$3.	5992	n	$2.	
2X2	n	$3.	6SH7	nu	$2.	12SJ7	nu	$3.	884	n	$5.	6080	u	$4.	
3A4	nu	$2.	6SJ7	nu	$2.	12SK7	nu	$2.	930	n	$3.	6842	n	$2.	
3A5	nu	$2.	6SK7	nu	$2.	12SL7	nu	$3.	950	u	$4.	6973	n	$2.	
3A8	n	$3.	6SL7	nu	$2.	12SN7	nu	$2.	955	n	$4.	7193	u	$2.	
3Q4	nu	$2.	6SN7	nu	$1.	12SQ7	nu	$2.	958	u	$4.	VR90	nu	$2.	
3S4	nu	$2.	6SQ7	nu	$2.	12SR7	nu	$3.	CK-			VR-			
3V4	nu	$2.	6SR7	nu	$2.	12V6	nu	$3.	1005	u	$3.	105	n	$2.	
4AB4	nu	$2.	6SS7	nu	$2.	12W6	n	$2.	E1158	u	$3.	VR-			
4AB7	nu	$2.	6SU7	n	$2.	12X4	n	$2.	1201	u	$3.	150	nu	$2.	
4AC5	nu	$2.	6SV7	n	$2.	19T8	nu	$3.	1203	u	$3.				
4AG7	nu	$3.	6W6	nu	$2.	35A5	nu	$3.	1232	u	$3.				
4AK5	nu	$2.	6X4	nu	$2.	35C5	nu	$2.	1273	u	$3.				
4AL5	nu	$2.	6X5	nu	$1.	35L6	nu	$2.	1612	u	$3.				
4AL7	n	$2.	6Y5	u	$2.	35W4	u	$2.	1625	u	$4.				
6AQ5	nu	$2.	6Y7	u	$2.	35Z4	nu	$2.	1626	u	$3.				

ADDITION:

1U4	n	$2.
2E30	n	$3.
6S7	n	$2.
35A4	n	$2.
35B5	n	$2.
6146	n	$3.

TABLE 5 - BALLAST TUBES - $3.00 each - all are new

JFD Type A,B & C; K36A; K49B; K80C; K92B; KX49B; L55B; 2B14; 3H7; 4P45; 7H11; 40A1; 100-77; 100-79; 165R; 165R4; 185R4; 250R; 6092A. AMPERITE 3TF7; VICTOREEN 1300-8

TABLE 6 - TV AND MISC. TYPES - tubes in this table are priced at — $2.00 new, $1.00 used *

1AX2	n	3BN6	nu	4BQ7	n	5AZ4	n	5T8	nu	6AM8	u	6AX4	nu		
1B3	nu	3BU8	nu	4BZ6	u	5B8	n	5U8	u	6AN8	nu	6AX5	n		
1D21	n	3BY6	n	4BZ7	u	5BQ7	n	5V6	u	6AQ7	nu	6BA7	n		
1X2	nu	3BZ6	nu	4CB6	nu	5BR8	n	5X8	n	6AR5	n	6BC5	nu		
2BN4	nu	3CB6	nu	4CS6	n	5CG8	nu	6AC5	nu	6AR6	u	6BC7	u		
2CY5	u	3CS6	nu	4DK6	u	5CL8	nu	6AC7	nu	6AS5	nu	6BD6	n		
2GK5	u	3DK6	u	4DT6	n	5CM8	n	6AD6	n	6AS7	u	6BF5	n		
2W3	nu	3DT6	nu	4EJ7	u	5CQ8	n	6AD7	n	6AS8	n	6BF6	n		
3AL5	u	3DZ4	u	4HT6	u	5DH8	u	6AE6	n	6AT8	nu	6BG6	u		
3AU6	nu	3ER5	n	4JC6	u	5FG7	u	6AF6	nu	6AU4	u	6BH6	n		
3AV6	n	3GK5	n	5AM8	u	5GX7	u	6AH4	n	6AU5	nu	6BH8	u		
3B2	u	4AU6	u	5AN8	nu	5J6	n	6AH6	n	6AU8	nu	6BK5	nu		
3BA6	u	4AV6	u	5AQ5	nu	5KE8	n	6AJ5	n	6AV5	u	6BK7	nu		
3BC5	u	4BN6	u	5AT8	nu	5LJ8	u	6AK6	n	6AW8	nu	6BL7	u		
6BN4	nu	6CG7	nu	6CU8	nu	6EM8	n	10DE7	n	12BH7	nu	17DQ6	nu		
6BN6	nu	6CG8	n	6CX8	u	6ES8	u	10JT8	n	12BK5	n	19AU4	n		
6BQ5	u	6CK4	u	6CY5	u	6EZ5	n	12AD6	n	12BQ6	u	19BG6	n		
6BQ6	nu	6CL6	n	6CY7	u	6GK6	n	12AF3	n	12BY7	nu	25AC5	n		
6BQ7	nu	6CL8	u	6CZ5	u	6JZ8	n	12AH7	nu	12BZ7	n	25AV5	n		
6BW8	n	6CM5	n	6DA4	u	6ME10	u	12AJ6	u	12CA5	nu	25AX4	nu		
6BX7	u	6CM7	nu	6DB5	u	6U8	nu	12AL5	u	12DQ6	u	25BK5	n		
6BY5	nu	6CM8	n	6DE6	u	6V3	n	12AV7	nu	12DT5	u	25BQ6	nu		
6BY6	u	6CN7	u	6DN7	n	6V4	n	12AX4	nu	12EG6	u	25CD6	n		
6BY8	u	6CQ8	n	6DQ6	n	6W4	nu	12AX7	nu	12EK6	n	25DN6	n		
6BZ7	n	6CR6	n	6DT6	u	7AU7	nu	12AZ7	u	12FX5	n	25W4	n		
6CB5	u	6CS6	nu	6DX6	n	8AW8	nu	12BA7	n	13DE7	u	35EH5	u		
6CB6	nu	6CS7	u	6EA7	n	9AU7	n	12BD6	n	13DR7	u	50EH5	u		
6CD6	n	6CU6	n	6EA8	u	9BR7	u	12BF6	n	17AX4	nu				

ADDITION- 6BD5 n 6CW4 n 12BK6 n

Send a self-addressed stamped envelope for a free copy of our Classic Radio Newsletter. We offer free technical advise for a self-addressed stamped envelope, or you may call J.W.F. Puett between the hours of 6:00 & 10:00 PM Central Daylight Time PLEASE. We are always glad to help if we can. call a/c 214 279-8309

SCHEMATIC DIAGRAM SERVICE -- We can furnish schematic diagrams & technical data on almost any radio from 1920 to 1954 from our library of original manufacturers service data. Send a self-addressed stamped envelope and $1.50 per radio set. This offer is limited to five photocopied pages. If your set exceeds five pages, we will send you a quote.